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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,655	12/05/2003	Michael J. O'Phelan	279.168US2	1280

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EXAMINER
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NGUYEN, HA T

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/728,655

Applicant(s)

O'PHELAN ET AL.

Examiner

Ha T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 and 36-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 36-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12-27-05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Notice to applicant***

1. Applicant's amendment, Response to the Office Action mailed 9-21-05 has been entered and made of record. In view of the finding of new art the allowability of claims 36-38 and 52-55 have been withdrawn.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 36 is rejected under 35 U.S.C. 102(b) as being anticipated by Fukami et al. (USPN 5377073, hereinafter "Fukami").

Referring to Figs. 2A-2B and related text, Fukami discloses a method of coupling a plurality of anode connection members of a capacitor, the method comprising: attaching an anode connection member 2 to two or more of a plurality of anodes 5; positioning each of the anode connection members so that each anode connection member is flush with each other anode connection member or connection members adjacent to each anode connection member; and edge-connecting each anode connection member to the anode connection member or connection members adjacent to each anode connection member directly along an exposed end face of each of the connection members.

3a. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

4. Claims 1-7, 9-12, and 39-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rorvick et al. (USPN 6009348, hereinafter "Rorvick") in view of Funari (USPN 4171477) or Hancock et al. (GB 825900, hereinafter "Hancock").

Referring to Figs. 4-6 and related text, Rorvick discloses [Re claim 1] a method of joining a connection member to a foil, the method comprising: positioning the connection member and the foil against each other; and forming a cold weld between the connection member and the foil by forcing the connection member and the foil together between a hardened surface 207 (stainless steel) and a staking pin 206a,b; [Re claim 2] wherein forcing the connection member and the foil together comprises striking the foil with the staking pin and forcing the foil into the connection member; [Re claim 7] wherein the foil comprises an etched anode foil (see col. 5, lines 27-33). But it fails to disclose expressly that the staking pin has a tip of less than or equal to approximately 0.030" (0.762 mm) in diameter and it is not clear whether the connection member is in physical contact with the hardened surface. However, the use of small sized pin is well known in the art because Funari or Hancock discloses a bonding tip of small size (See Funari, col. 8, lines 13-15 and Fig. 3b, Hancock, fig. 4 and lines 16-27). A person of ordinary skill is motivated to modify Rorvick with Funari or Hancock to obtain weld of desired size. Besides, it would have been obvious that the connection member is in physical contact with the hardened surface if the connection is done to the lowest anode and the connection member is positioned on the outer side of the anode stack.

[Re claim 9] The combined teaching of Rorvick and Funari or Hancock discloses a method of joining a connection member to a foil, the method comprising: placing the connection member against a hardened surface; placing the foil between the connection member and a staking tool; and forcing the foil into the connection member with the staking tool using enough force to create a cold weld, as shown above, the examiner interpreted that since cold weld is formed, it is inherent that the force used is sufficient.

[Re claim 39] The combined teaching of Rorvick and Funari or Hancock discloses a method of joining two or more foils, the method comprising: positioning the two or more foils in a stack, and forcing the two or more foils together between a hardened surface and a staking pin which has a tip of less than approximately 0.060" (1.524 mm) in diameter; [Re claim 40] wherein the staking pin has a tip of approximately 0.025" (0.635 mm) in diameter; [Re claim 43] wherein forcing the two or more foils together comprises forcing at least one foil comprising an etched anode foil together with one or more other anode foils; [Re claim 44] wherein forcing the two or more foils together comprises forcing three anode foils together, each anode foil comprising an

etched foil; [Re claim 45] wherein positioning the foils comprises stacking three etched anode foils in a dimension perpendicular to a major surface of each of the anode foils, as shown above.

[Re claim 46] Rorvick also discloses wherein the two or more foils comprise two or more anode foils, each anode foil approximately 0.004', (0.1016 mm) thick (see col. 20, lines 14-54).

[Re claim 3] Funari also discloses wherein the staking pin has a conical shape approximately 0.015" (0.381 mm) at its tip (See col. 8, lines 13-15 and Fig. 3b). But the combined teaching of Rorvick and Funari fails to disclose expressly the frusto-conical shape. However, this would have been obvious for a person of ordinary skill to do so to obtain small weld with less interference with adjacent welds.

[Re claim 4] Funari discloses the positioning of the staking pin above the hardened surface (see par. bridging cols. 6-7) and Rorvick discloses the tab to be near the edge of the foil (see Fig. 4) . But the combined teaching of Rorvick and Funari fails to disclose providing a second staking pin, wherein the two staking pins are approximately 0.040" (1.016 mm) apart; [Re claims 5 and 10] further comprising: positioning the staking pin to a terminal height of approximately 0.001" (0.0254 mm) above the hardened surface; positioning the staking pin to strike at approximately 0.1201" (3.048 mm) from an edge of the foil; [Re claims 6, 11, and 42] wherein forcing the connection member and the foil together comprises forcing the connection member and the foil together at a force between 100 and 1000 pounds; and [Re claim 41] setting the staking pin to a displacement height of approximately 0.001" (0.0254 mm) above the hardened surface. However, it would have been obvious to a person of ordinary skills in the art to have the appropriate number of welds at appropriate location depending in the shape and size of the electrodes and/or connection members and apply an appropriate force to ensure good welding while not breaking the electrodes or connection members.

[Re claim 12] Arguments stated in the rejection of claims 3 and 4 also apply. The combined teaching of Rorvick and Funari or Hancock fails to disclose expressly that the pin is approximately 0.028" (0.712 mm) at its base. However any variation in pin dimension in the present claims is obvious in light of the cited art, because the changes in dimension produce no unexpected function.

The routine varying of parameters to produce expected changes are within the ability of one of ordinary skill in the art. Patentability over the prior art will only occur if the parameter

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variation produces an unexpected result. *In re Aller, Lacey and Hall*, 105 U.S.P.Q. 233, 235. *In re Reese* 129 U.S.P.Q. 402, 406.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rorvick in view of Funari or Hancock, as applied above, and further in view of Strange et al. (USPN 6299752, hereinafter "Strange").

The combined teaching of Rorvick and Funari or Hancock discloses substantially the limitations of claim 8, as shown above. Rorvick also discloses wherein the foil comprises an anode foil having a porous structure (see col. 5, lines 29-33).

But it fails to disclose expressly a formation voltage of greater than approximately 441 volts.

However, Strange discloses this feature (See col. 10, lines 24-65).

A person of ordinary skill is motivated to modify Rorvick and Funari or Hancock with Strange to obtain capacitor capable of tolerating high voltage.

6. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukami .

Referring to Figs. 2A-2B and related text, Fukami discloses substantially the limitations of claim 37, as shown above. It also discloses the use of laser for welding (see col. 3, lines 659-68 and col. 4, lines 37-42).

But it fails to disclose expressly the welding is done along a seam between each of the anode connection members.

However, at the time of the invention, it would have been obvious to a person of ordinary skill to weld along the whole surface of the section "4" in Fig. 2B including along a seam between each of the anode connection members.

The motivation for doing so is to have a better secured weld formed.

7. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rorvick in view of Fukami.

Referring to Figs. 4-6 and related text, Rorvick discloses substantially the limitations of claim 38, as shown above. It also discloses wherein each of the plurality of connection members having a cut-out adapted to matchably fit within a notch on an anode (see Fig. 4).

But it fails to disclose expressly positioning each of the anode connection members so that each anode connection member is flush with each other anode connection member or connection members adjacent to each anode connection member; and edge-connecting each anode connection member to the anode connection member or connection members adjacent to each anode connection member directly along an exposed end face of each of the connection members.

However, the missing limitations are well known in the art because Fukaumi discloses these features, as shown above.

A person of ordinary skill is motivated to modify Rorvick with Fukaumi to obtain secure connection without deforming the connection members.

Therefore, at the time of the invention, it would have been obvious to combine Rorvick with Fukaumi to obtain the invention as specified in claim 38.

8. Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rorvick in view of MacFarlane et al. (USPN 5584890, hereinafter "MacFarlane") and Fukaumi.

[Re claims 52 and 55] Referring to Figs. 4-6 and related text, Rorvick discloses a method of assembling a capacitor, the method comprising: assembling two or more anode stacks by a method comprising: staking a connection member to an anode foil by a first stake weld using a staking tool to force the anode foil into the tab; and staking the anode foil to a second anode foil; stacking the two or more anode stacks into a capacitor stack so that each anode connection member is flush with each other anode connection member or connection members adjacent to each anode connection member (see Figs. 5(a) and 6(a)-6(c)); welding each anode stack connection member to each other adjacent anode stack connection member (see par. bridging cols. 26-27 and col. 31, lines 29-54).

But it fails to disclose expressly attaching connection member to only a first anode foil by a first weld; and welding the first anode foil to a second anode foil by a second weld; and edge-connecting each anode connection member to the anode connection member or connection

members adjacent to each anode connection member directly along an exposed end face of each of the connection members.

However, the missing limitations are well known in the art because in Figs. 2-6A and related text, MacFarlane discloses a method of assembling an anode stack, the method comprising: welding a tab to only a first anode foil by a first weld (see Fig. 5); and welding the first anode foil to a second anode foil by a second weld 27 (see Fig. 6A) and Fukami discloses the edge connecting of connection members, as shown above.

A person of ordinary skill is motivated to modify Rorvick with McFarlan and Fukami to obtain reliable weld with less change for deformation of foils and connection members.

Therefore, , at the time of the invention, it would have been obvious to combine Rorvick with McFarlan and Fukami to obtain the invention as specified in claims 52 and 55.

9. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rorvick in view of MacFarlane and Fukami, as applied above, and further in view of Funari or Hancock.

The combined teaching of Rorvick, Fukami and MacFarlane discloses substantially the limitations of claim 53, as shown above.

But it fails to disclose expressly wherein staking the first anode foil to the second anode foil comprises forcing the first anode foil together with the second anode foil with a staking pin having a tip diameter less than approximately 0.060" (1.524 mm).

However, this limitation is well known in the art because Funari or Hancock discloses this feature, as shown above.

Therefore, it would have been obvious to combine Rorvick, Fukami and MacFarlane with Funari or Hancock to obtain the invention as specified in claim 53.

10. Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rorvick in view of MacFarlane and Fukami , as applied above, and further in view of Strange et al. (USPN 6299752, hereinafter "Strange" ).

The combined teaching of Rorvick, Fukami and MacFarlane discloses substantially the limitations of claim 54 , as shown above.



But it fails to disclose expressly wherein the first anode foil and the second anode foil each comprise an anode foil having a porous structure and a formation voltage of greater than approximately 441 volts.

However, Strange discloses these features (See col. 10, lines 6-65).

A person of ordinary skill is motivated to modify Rorvick, Fukami and MacFarlane with Strange to obtain capacitor capable of tolerating high voltage.

### ***Response to Amendment***

11. Applicants' arguments with regard to the rejections under 35 U.S.C. 103 have been fully considered, but they are not deemed to be persuasive for at least the following reasons.

Applicants argued that Funari does not disclose the use of staking pin and its size. The examiner disagreed. In Funari the pin is for welding, in a broad interpretation, the welding pin functions like a staking pin due to the force applied on the pin to press the components to be joined. Besides Funari is used to teach the size of the pin used for connecting a connection member to a foil or connecting two foils together. Even though, Funari does not expressly discuss the size of the pin, however, Funari discloses the sizes of the wire and of the pad on which the wire is applied. Fig. 3b shows that the pin tip is about the size of the wire and as clearly shown in Figs. 3a-3b and 6, the pad 56, which is about 0.002 inches by 0.002 inches, is much larger than the pin tip. Therefore, Funari's tip dimensions must be smaller than 0.002 inches, which is less than the claimed 0.030 inch. In a similar manner, even though in Hancock the drawings are not made to scale, the relative sizes of features shown suggest to an ordinary artisan that the size of the projections is very small. Note that applicant's arguments are largely directed to what the cited references teach individually. However, it is axiomatic that one cannot show nonobviousness by attacking references individually where the rejection, as here, is based on a combination of references. *In re Young*, 403 F.2d 754, 159 USPQ 725 (CCPA 1968); *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). For example, applicant argues that Funari does not disclose cold weld as here claimed. However, Rorvick, not Funari, is employed in the rejection to show that feature of the claimed process.

Applicants also argued that Rorvick teaches away from modifying the geometry of the 0.060" weld pin. The examiner disagreed, even though the 0.060" weld pin is "appropriately

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optimized” for the thickness of Rorvick anode sub-assembly, this does not teach away from having smaller weld for designs where thinner anode sheets or smaller anode design is needed. For a defibrillator, an instrument to be installed in a human body, smaller size is always in great demand. Therefore, there is no teaching way from making smaller design requiring smaller weld, on the contrary, this is a good motivation to combine Funari with Rorvick.

Therefore, the combined teaching of Rorvick with the applied references does disclose or make obvious all the limitations of the rejected claims.

### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ha T. Nguyen whose telephone number is (571) 272-1678. The examiner can normally be reached on Monday-Friday from 8:30AM to 6:00PM, except the first Friday of each bi-week. The telephone number for Wednesday is (703) 560-0528.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt, can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HN

03-16-06



Ha Nguyen  
Primary Examiner